

SONY
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LMD-1951MD 19-inch Medical LCD Monitor

Clarity that displays every detail



LMD-1951MD

www.pro.sony.eu/medical

Superb picture quality across both SD and HD

The high-resolution 19-inch* LMD-1951MD LCD medical monitor brings outstanding clarity to medical environments. Designed for both SD (Standard Definition) and HD (High Definition) systems that generate a 5:4 or 4:3 aspect ratio signal output, and featuring an optional DC power supply, it is ideal for surgery arm mount applications.

With its compact design and input flexibility, the LMD-1951MD can be smoothly integrated into an endoscope system, operating room, examination room or training lab. Easy integration makes it the ideal choice for today's demanding medical applications.

Inheriting the most appreciated features of the popular LMD-2451MD, the monitor provides ChromaTRU™ colour processing for excellent picture reproduction, a full 10-bit digital signal processor to produce accurate and lifelike images, and enhanced viewing modes such as Mirror Image and Picture-in-Picture.

In addition, new LED backlight technology enables the LMD-1951MD to reproduce brighter images than previous models.

**Viewable area, measured diagonally.*



The first dedicated medical monitor from Sony with LED technology

Since LCD displays do not emit light, they need a luminous source – a backlight. There are two alternative backlight technologies: CCFL and LED.

Because it has been considered to provide a better combination of luminous efficiency and affordability, CCFL has tended to be the most common choice. The argument against LED has pointed to the technology required to control each LED's emission quality and temperature, as well as cost.

With the LMD-1951MD, however, Sony has produced the first dedicated LED medical monitor to overcome these objections by outperforming CCFL and consumer LED technology across numerous criteria.

How Sony LED outperforms the competition

More eco-friendly and safer

The Sony LED backlight is Hg-free, making the LMD-1951MD more environmentally-friendly. It is also free of parts incorporating high voltage – unlike CCFL – making the LMD-1951MD safer.

More lightweight and thinner for portability and space-saving

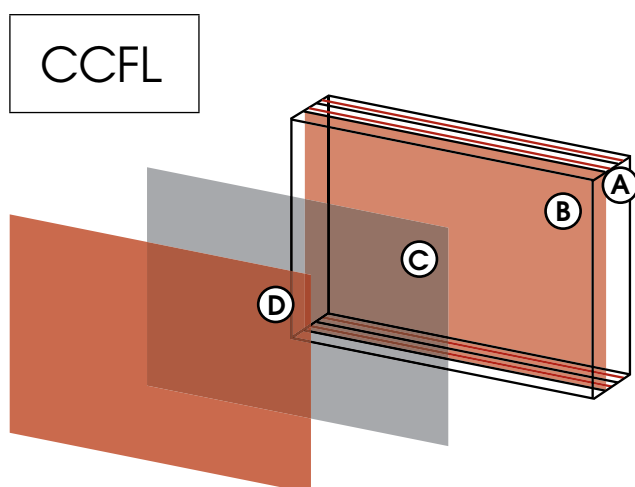
The thinner size and lighter weight of the LMD-1951MD – especially compared to CCFL monitors – make it ideal for busy healthcare environments where stress-free portability and space-saving are important. The LMD-1951MD's LED panel is approximately 25% thinner and lighter than the CCFL panel of its predecessor, the LMD-1950MD.

Lower power consumption

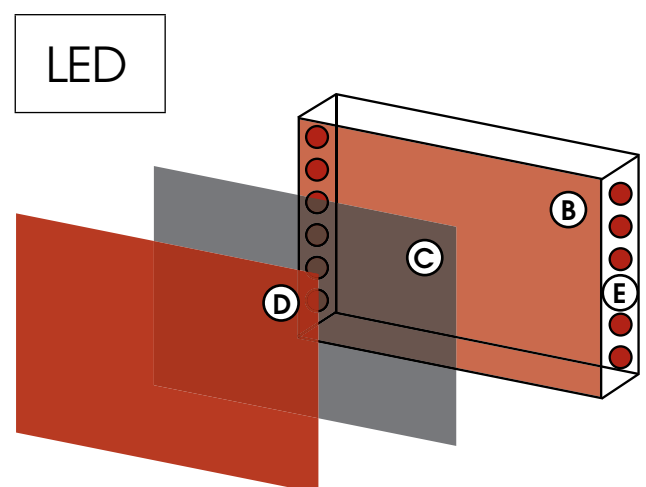
The LMD-1951MD delivers approximately 2.5 times the brightness level of the LMD-1950MD for the same power consumption.

Improved colour spectrum for medical applications

The LMD-1951MD's LED backlight reproduces images with high purity colour and is especially effective across the red end of the colour spectrum – an area where other LED screens (such as consumer LED TVs) perform less well.



- Ⓐ CCFL backlight on edge (top and bottom)
- Ⓑ Light guide plate
- Ⓒ Diffuser film



- Ⓓ LCD Display Panel
- Ⓔ LED backlight on edge (both sides)

Features

1 Excellent picture reproduction

ChromaTRU™ colour processing

For the highest level of colour-reproduction accuracy, every LCD panel used in the LMD-1951MD is precisely colour calibrated at the factory to ensure consistent characteristics and colour consistency across other monitors for critical observations.

Excellent brightness and contrast

With its combination of new LED backlight technology and high-quality SXGA LCD panel, the LMD-1951MD delivers bright, high-contrast images. Its robust anti-reflective (AR) coated protection panel also minimises reflection from ambient light and protects the surface from scratches.



Natural gradation and accurate colour reproduction (10-bit DSP)

The LMD-1951MD uses an advanced full 10-bit digital video signal processor to produce accurate and lifelike images, with smooth and natural gradation.



2 Medical-friendly design

Liquids resistant

The LMD-1951MD achieves the IPX1 standard for a higher level of protection than ordinary products from drips, leaks and spills. Additionally, the connector cover protects the wide connector area from dust accumulation to maintain efficient cleanliness.

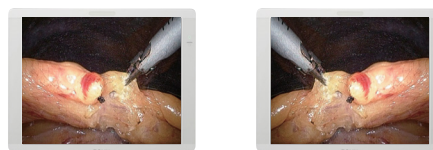
Flat surface

The LMD-1951MD employs flat-sheet switches with a smooth transition to the LCD panel, enabling users to easily wipe liquids or gels off the control panel and LCD panel to ensure cleanliness and disinfection.

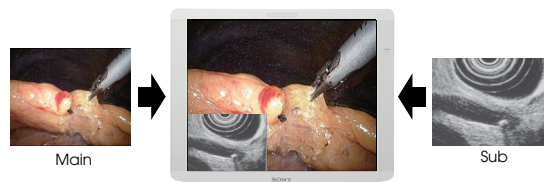
3 Variety of scan/display modes

Enabling users to select the most suitable scan size for each requirement, image scan modes include NORMAL/OVER scan, UNDER scan, FULL, ZOOM and NATIVE. In addition, the LMD-1951MD features a variety of display modes, including Mirror Image and Picture-in-Picture (allowing users to view two images at a time).

Mirror Image



Picture-in-Picture



Scan modes

SCAN		NORMAL (7% zoom)	OVER (20% zoom)	UNDER (0% zoom)	FULL (Zoom for vertical fit)	NATIVE (1:1 pixel mapping)
INPUT						
4						
3						
	SD Signal					
16						
9						
	SD Signal					
16						
9						
	HD Signal					

4 Operational convenience

Gamma curve selection

Depending on the requirement, users can choose from variety of gamma settings: 2.0, 2.2, 2.4, 2.6 and DICOM. Thus enabling the user to adjust the picture reproduction in non-linear lightning condition as it appears widely in medical procedures, showing pictures with very bright and very dark elements at the same time.

Direct input selection

Direct input selection allows users to switch image sources when they need to monitor multiple images from different source signals during an operation, by simply pressing the corresponding input select button on the front panel.

Sheet Key menu selection and Key inhibit function

Users can activate/de-activate control panel buttons with just one touch of the CONTROL button. The buttons are illuminated during the activation for easy identification. De-activation helps prevent inadvertent operation of the control panel in a busy environment. Furthermore, if the menu item KEY-INHIBIT is set to ON, the control panel buttons cannot be used, preventing unauthorized alteration of the settings.

VESA-mounting compatibility

The LMD-1951MD complies with the 100mm hole spacing VESA-mounting standard, making it ideal for use with variety of medical equipment arms.

AC and DC operation

The LMD-1951MD can be operated with both AC and DC power sources to match installation requirements. With the optional AC-110MD AC adapter, the monitor can be deployed wherever AC is supplied.

5 Input options and expandability

The LMD-1951MD is equipped with variety of inputs, including Composite, Y/C, RGB/Component, HD15 and DVI-D as standard. Furthermore, two built-in option ports greatly expand the input signals this monitor can accept, enabling users to easily select and change input/output signals via a variety of available option boards for ultimate flexibility.

BKM-256DD board

The optional BKM-256DD board allows users to employ a maximum of two DVI inputs and one loop-through output

BKM-250TG board

The optional BKM-250TG board enables the monitor to accept a 3G-SDI input signal, allowing the transfer of 1080p/60 signals via a single SDI cable.

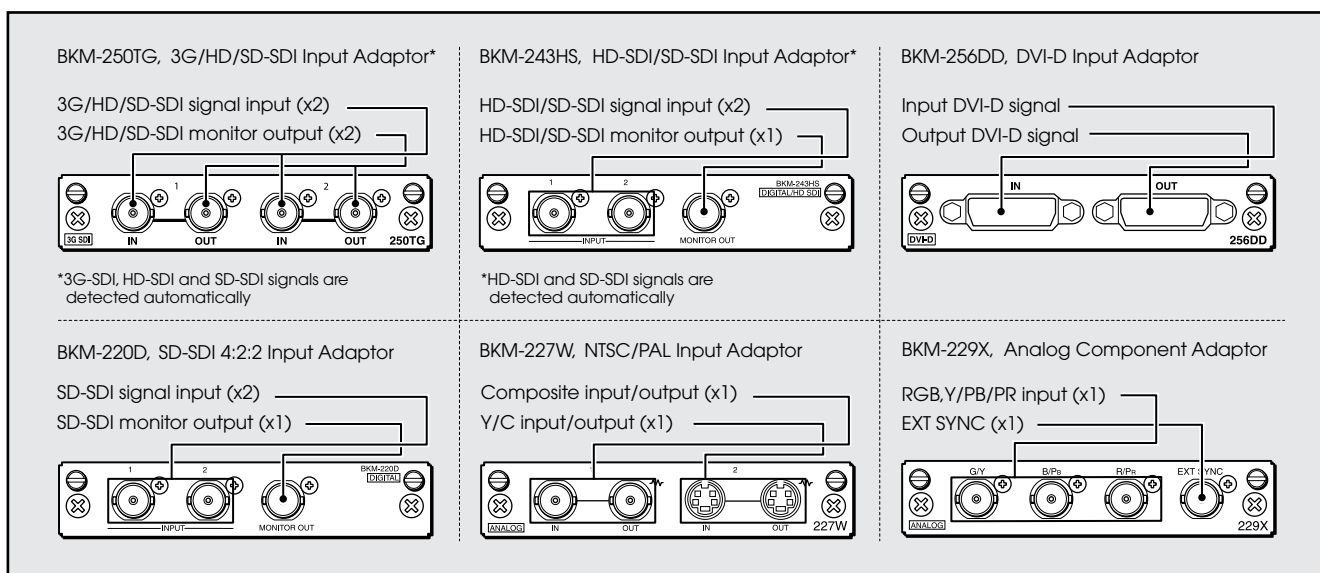
6 Input signal formats compatibility

The LMD-1951MD supports a variety of video formats, from 525i/50(NTSC) and 625i/60(PAL) up to 1080p/50 and 1080p/60¹. In addition, it supports a variety of computer signal formats when HD15 and DVI-D input signals are used.

Medical compliances

The LMD-1951MD is UL60601-1 listed and complies with CSA22.2 No.60601 and EN60601-1 safety regulations, ensuring it is suitable for use in professional medical applications.

Input signal adaptor boards



¹ To support 1080p/50 and 1080p/60 other than input from DVI-D requires an optional BKM-250TG 3G/HD/SD-SDI input adaptor.

LMD-1951MD Specifications

Input	
Composite input (NTSC/PAL) connector	BNC type (x1), 1 Vp-p $\pm$ 3 dB sync negative
Y/C input connector	4-pin mini-DIN (x1) Y: 1 Vp-p $\pm$ 3 dB sync negative C: 0.286 Vp-p $\pm$ 3 dB (NTSC burst signal level) 0.3 Vp-p $\pm$ 3 dB (PAL burst signal level)
Component/RGB input	BNC type (x3) RGB: 0.7 Vp-p $\pm$ 3 dB (Sync On Green, 0.3 Vp-p sync negative) Component: 0.7 Vp-p $\pm$ 3 dB (75% chrominance standard color bar signal)
External synchronized input connector	BNC type (x1) 0.3 Vp-p to 4.0 Vp-p $\pm$ bipolarity ternary or negative polarity binary
HD15 input connector	D-sub 15-pin (x1), R/G/B: 0.7 Vp-p sync positive (Sync On Green, 0.3 Vp-p sync negative) Sync: TTL level (polarity free, H/V separate sync) Plug & Play function: corresponds to DDC2B
DVI input connector	DVI-D (x1) TMDS single link
Parallel remote	Modular connector 8-pin (x1)
Serial remote (LAN)	D-sub 9-pin (RS-232C) (x1) RJ-45 modular connector (ETHERNET) (x1)
Optional input port	2 ports. Signal format: H: 15 kHz to 45 kHz V: 48 Hz to 60 Hz
DC IN connector	DC5V/24V (output impedance 0.05 ohms or less)
Output	
Composite output	BNC type (x1) Loop-through, with 75 ohms automatic terminal function
Y/C output	4-pin mini-DIN (x1) Loop-through, with 75 ohms automatic terminal function
RGB/component output connectors	BNC type (x3) Loop-through, with 75 ohms automatic terminal function
External synchronized output connector	BNC type (x3) Loop-through, with 75 ohms automatic terminal function
General	
Power requirement	LCD monitor (LMD-1951MD) AC 100-240 V, 50/60 Hz, 0.92 A-0.40 A DC IN: 24 V 3.5 A 5 V 0.030 A (Supplied from AC adaptor) AC Adaptor (Sony, AC-110MD) (optional) AC IN: 100 V-240 V, 50/60 Hz, 1.53 A-0.58 A
Power consumption	Maximum: approx. 85 W (when two BKM-229X are installed)
Operating temperature	0 °C to 35 °C (32 °F to 95 °F)
Operating humidity	30% to 85% (no condensation)
Operating pressure	700 hPa to 1060 hPa
Temperature for storage	-20 °C to +60 °C (-4 °F to +140 °F)
Humidity for storage	0% to 90% (no condensation allowed)
Pressure for storage	700 hPa to 1060 hPa
Mass	6.7 kg (14 lb 12 oz) (without optional boards, without stand) 7.1 kg (15 lb 10 oz) (without stand)
Dimensions (w x d x h)	455.8 x 368.3 x 101.7 mm (18 x 14 5/8 x 4 1/8 inches) (without stand) 455.8 x 435.7 x 302 mm (18 x 17 1/4 x 12 inches) (with SU-560 optional stand)
Accessories supplied	AC power cord (1), AC plug holder (2), Instructions for Use (1), CD-ROM (1), Using the CD-ROM Manual (1), Quick Reference(1), When you First Use the Monitor (1), Sales Companies Guide (1)

LCD panel	
Type	α -Si TFT Active Matrix LCD
Resolution	1280 x 1024 pixels (SXGA)
Effective picture size (W x H)	Approx. 376 x 301 mm (14 7/8 x 11 7/8 inches)
Aspect ratio	5:4
Diagonal	481.84 mm (19.0 inches)
Viewing angle	89°/89°/89°/89° (typical) (up/down/left/right contrast > 10:1)
Pixel efficiency	99.99%
Colours	Approx. 16.7 million colours

Optional accessories	
	BKM-220D SD-SDI 4:2:2 input adaptor
	BKM-243HS HD-SDI/SD-SDI 4:2:2 input adaptor
	BKM-227W NTSC/PAL input adaptor
	BKM-229X Analogue component adaptor
	BKM-250TG 3G HD-SDI input adaptor
	BKM-256DD DVI-D Digital in & out adaptor
	AC-110MD AC adaptor
	SU-560 Monitor stand

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